GUIDELINES

Guidelines for hospital privileges in vascular surgery: An update by an ad hoc committee of the American Association for Vascular Surgery and the Society for Vascular Surgery

Wesley S. Moore, MD, G. Patrick Clagett, MD, Frank J. Veith, MD, Gregory L. Moneta, MD, Marshall W. Webster, MD, James C. Stanley, MD, Kenneth Ouriel, MD, George Andros, MD, Keith D. Calligaro, MD, and **K. Craig Kent, MD,** *Los Angeles, Calif*

When vascular surgery emerged as a separate specialty from its general surgery parent, hospitals were in need of guidelines for granting privileges to individuals wishing to practice vascular surgery. In 1989, a report of an ad hoc committee of the Joint Council of the Society for Vascular Surgery and the International Society for Cardiovascular Surgery (North American Chapter) was published.[1] The Guidelines for Hospital Privileges in Vascular Surgery was widely accepted and became the primary source document for hospital credentials committees. In the ensuing 12 years, vascular surgery has continued to expand as a specialty. Therefore, there is a clear need to update the original guidelines for hospital privileges. The new ad hoc committee of the American Association for Vascular Surgery and the Society for Vascular Surgery was charged with this responsibility.

Since the publication of the 1989 document, 4 developments have occurred that have made this update necessary. The first is the publication of multiple studies that document the variability of practice and outcomes of common vascular procedures.[2-4] Most of these studies have established a clear relationship between good outcomes and high volume of procedures performed for individual surgeons and, conversely, alarmingly high morbidity and mortality rates for surgeons who have performed a low volume of procedures. Some studies document significantly better outcomes in trained vascular surgeons who are board-certified in vascular surgery.[5-7] The second development has been the incorporation of catheter-based endovascular therapies into the practice of vascular surgery. The Accreditation Council for Graduate Medical Education (ACGME) has designated endovascular therapies as an important component of vascular surgery training and has said that contemporary graduates from vascular residencies should be trained in endovascular intervention. The third development was the formation of the Vascular Surgery Board of the American Board of Surgery (VSB-ABS).[8] The American Board of Surgery (ABS) has delegated responsibility to the VSB-ABS for all board/examination-related activities pertaining to vascular surgery. The final development has been the competence initiative of the American Board of Medical Specialties (ABMS). This organization has charged all of their member boards with developing mechanisms to link board certification and competence. Until now, board certification and recertification in most medical specialties were primarily dependent on passing examinations that tested cognitive knowledge and judgment ability. The charge to all boards by the ABMS is to expand areas of assessment to include professionalism, evidence of ongoing learning, ethical conduct, interpersonal skills, and evidence of attempts at practice improvement on the basis of outcomes.

Although proper training and certification are a means of defining a surgeon's qualifications, they do not assure competence in a particular specialty. The ultimate determination of who should and should not practice vascular surgery in a given hospital is the responsibility of the individual hospital through its credentialing mechanisms. This report will define optimal criteria for credentialing, although they may require modification by individual hospitals to meet local community needs and standards. The ultimate goal in preparing this document is to assist hospitals and practicing physicians in improving the quality of care and treatment outcomes for patients with vascular disease.

From the Division of Vascular Surgery, UCLA Center for the Health Sciences.

Competition of interest: nil.

Reprint requests: Wesley S. Moore, MD, Professor of Surgery, Division of Vascular Surgery, UCLA Center for the Health Sciences, 10833 LeConte Ave, Room 72-156, Los Angeles, CA 90095-6904 (e-mail: wmoore@mednet.ucla.edu).

J Vasc Surg 2002;36:1276-82.

0741-5214/2002/$35.00 + 0 **24/9/129651**

doi:10.1067/mva.2002.129651

DEFINITION OF VASCULAR SURGERY

Vascular surgery is a specialty that encompasses the diagnosis and treatment of diseases of the arterial, venous, and lymphatic systems, exclusive of those components intrinsic to the heart and intracranial vessels. Five components of vascular surgery have been identified, and a fully trained vascular surgeon must have advanced knowledge and experience in each of these areas:

1. Clinical evaluation, including history and physical examinations. Also included is the non-operative treatment of vascular disorders, including drug therapy and risk factor management.
2. Non-invasive and invasive testing of the vascular system, including plethysmography, duplex ultrasound scanning, magnetic resonance imaging, computed tomography scan interpretation, the performance and interpretation of contrast angiography, and other tests important to the diagnosis of vascular disease.
3. Indications and techniques relating to open operative treatment of vascular disorders, including congenital, occlusive, aneurysmal, and inflammatory disease involving the arteries and veins of the body, with the exception of intracranial vessels and vessels intrinsic to the heart; this includes, but is not limited to, the cerebrovascular system including intrathoracic arch branches, the entire descending thoracic aorta, the abdominal aorta, the venous system of the chest and the abdomen, the visceral and renal arteries, and the arteries and veins of the pelvis and lower extremities.
4. Indications and techniques relating to endovascular interventions (endovascular surgery), including balloon angioplasty, stenting, or both of all vessels (excluding the intracranial and coronary arteries), aortic and peripheral vascular endovascular stent/graft placement, thrombolysis, and other adjuncts for vascular reconstruction.
5. Critical care management, including the preoperative and postoperative evaluation and treatment of vascular patients in the intensive care setting; this management includes understanding the indications and techniques relating to the insertion of peripheral artery, central venous, and pulmonary artery catheters for hemodynamic monitoring.

TRAINING AND CERTIFICATION

The responsibility for approving training programs in vascular surgery rests with the ACGME through its designated agent, the Residency Review Committee for Surgery (RRC-S). This organization accredits training programs on the basis of the applicant program's ability to meet certain defined standards, confirmed by means of an inspection of the program with an on-site review. The VSB-ABS defines a body of knowledge that is expected among graduates of training programs in vascular surgery. It provides a certifying mechanism to determine whether an individual can meet the standards set by the VSB-ABS for cognitive knowledge and hypothetical case management. This comes in the form of a written examination that is taken at the completion of a vascular surgery residency. After a candidate successfully passes the written examination, an oral examination is given. When a candidate passes both the written and oral examinations, that individual will receive certification by the ABS. The VSB-ABS also oversees the ABS program of maintenance of certification in vascular surgery (recertification), by means of which cognitive ability as it relates to vascular surgery and professional standing are assessed. Therefore, an individual will be required to undergo periodic written reexamination.

SCOPE OF VASCULAR SURGERY TRAINING

A detailed description of the vascular residency curriculum is beyond the limit of this report. However, a brief outline should be helpful to hospital credentials committees.

It is expected that applicants for residency training in vascular surgery will have successfully completed a general surgery residency and be eligible for the board examination in general surgery. The basic residency in vascular surgery is 1 year in a program approved by the RRC-S. Many programs have adopted a second year as a part of the curriculum. This additional year traditionally was devoted to research and preceded the clinical year. The RRC-S has now approved a 2-year curriculum. Many programs have modified the additional year to include extra training in endovascular techniques and vascular laboratory diagnosis. Currently, there are discussions within the ABS, the ABMS, the VSB-ABS, and ACGME about modifying the curriculum. Pilot programs consisting of 4 years of general surgery followed by 2 years of vascular surgery are currently being discussed and may well be implemented by the time this manuscript is published. After successful completion of a vascular residency in an RRC-approved program, the individual is eligible to sit for the written examination in vascular surgery. After passing the written examination, and after completing a basic practice requirement, the candidate is then eligible for oral examination. After successful completion of the oral examination, a certificate attesting to qualifications in vascular surgery is issued by the ABS. Although exposure to vascular surgery is included in a general surgery curriculum, it is understood that recent graduates from general surgery and cardiothoracic surgery residencies who have not completed an additional year of vascular surgery training are not likely to posses the necessary judgment and adequate experience to practice the full range of complex procedures encompassed by the discipline. The importance of extended training in vascular surgery is attested to by the RRC-S having approved programs that provide an additional 1 or 2 years of training in vascular surgery beyond the general surgery residency, and only graduates of these extended programs are provided the opportunity to be examined and certified in vascular surgery. Similarly, graduates of cardiothoracic programs without an ACGME-approved component for vascular surgery training do not receive comprehensive training in vascular surgery.

Table I. Minimum exposure requirements for vascular surgery programs

Procedure	*Minimum number*
Abdominal vascular	30
Cerebrovascular	25
Peripheral vascular	45
Complex reconstruction	10
Endovascular grafting	5
Interventional, diagnostic	50
Interventional, therapeutic	25

The optimum training program in vascular surgery includes full exposure and participation in all 5 components of the specialty. These are outlined.

I. Open surgery

The vascular surgery resident is expected to have participated and performed the full spectrum of open operations that constitute the field of vascular surgery and, in sufficient number, to demonstrate technical competence. This component is most carefully evaluated by reviewers from the RRC-S, and graduates of approved programs can be viewed as having successfully mastered this component.

The minimum case requirement for accredited vascular surgery residencies had previously been defined as the completion of at least 100 major open vascular reconstructive operations. Only 1 operation was counted for each operative encounter, although it might have involved several different procedures. The RRC-S, with input from the Association for Program Directors for Vascular Surgery, recently approved the addition of subcategories of procedures to this requirement. Effective Jan 1, 2004, all programs will be required to provide a broad exposure to vascular surgery procedures, defined by means of minimum requirements, in which each procedure performed during an operation can be counted (Table I).

These are minimum requirements; most vascular surgery residencies currently exceed this number. These minimum requirements relate to cases in which the vascular resident is the operating surgeon. Cases in which they serve as first assistant are in addition to the minimum requirements. Also, case requirement alone does not comprise the overall training that the vascular resident receives. The entire training package, which includes an operative case requirement, is required to develop the judgment and experience necessary for managing the full range of complex procedures encompassed by the discipline.

II. Endovascular surgery

The introduction of endovascular surgery into the curriculum of vascular surgery is relatively new. Although many programs have successfully added this component to their training, some programs may not yet have achieved optimum exposure. However, all will be required to do so by 2004. Thus, individuals requesting endovascular privileges as part of their overall vascular surgery hospital privilege application should be prepared to document optimum training in endovascular surgery before a hospital will grant privileges in this component. Endovascular procedures are being used with increasing frequency in the treatment of patients with peripheral vascular disease. These procedures require that the individual be familiar with intravascular catheter techniques. Many vascular surgeons have acquired endovascular skills and are using these techniques on a regular basis. They require no further training or credentialing. For vascular surgeons who have not yet included endovascular surgery in their practice, endovascular skills must be learned and mastered before they can be incorporated into a surgeon's practice. There are certain pathways by which this may be accomplished:

A. Vascular surgical residency. Vascular residencies are required to provide training in endovascular techniques, and minimum numerical criteria have now been developed. By 2004, all vascular surgery residents who graduate from approved vascular residency programs will be required to have the training necessary to perform catheter-based interventions. Although adequate training is currently available in residency programs, there has not been a process in place to distinguish these programs from those that do not yet offer this level of preparation.[9] Thus, adequacy in training of surgeons currently completing their vascular surgical residencies must be documented by submitting their caseload experience with endovascular procedures accrued during training. This experience should be verified by the program director.

B. Adjunctive fellowship. The completion of an adjunctive fellowship in endovascular surgery (often 3 months in duration) comprises a second pathway for training that can lead to hospital privileges. This training should include the wide range of diagnostic modalities requiring selective arterial catheterization. The minimum training should also include basic percutaneous peripheral angioplasty and stenting of the aortoiliac system and may include more complex procedures, such as renal angioplasty and endovascular repair of an abdominal aortic aneurysm. Surgeons completing adjunctive fellowships should document their caseloads with verification by the directors of the adjunctive fellowship programs.

The actual number of procedures and the spectrum of techniques have been specified in a document sponsored by the Society for Vascular Surgery.[10] The reader is referred to this document for more detail, but numerically it includes 50 catheterization/angiograms and 25 interventions, both with the surgeon as the primary interventionist. In these current guidelines, minimum numbers are suggested for most procedures, with the exception of aortic endografting or renal or carotid artery stenting. However, it is widely agreed that a mentored experience should be obtained before any of these procedures are performed independently. As with all vascular interventions, close monitoring of outcomes is essential.

The location in which endovascular procedures are performed will vary among hospitals. It is expected that

those individuals who qualify for hospital privileges in endovascular surgery will also be given access to the appropriate special procedures facility within that hospital.

III. Noninvasive vascular laboratory diagnosis

Although many training requirements, such as endovascular surgery, have been addressed in earlier publications, specific training requirements for noninvasive vascular diagnosis and the basis for granting privileges for interpretation have yet to be published. The Society for Vascular Surgery/American Association for Vascular Surgery Committee on Vascular Laboratories has prepared a statement, which is being incorporated in full in this manuscript, as its first publication.

The noninvasive vascular laboratory provides much of the scientific basis for the practice of vascular surgery. Interpretation of noninvasive vascular laboratory examinations is therefore inherently important to the practice of vascular surgery. By virtue of their clinical training, vascular surgeons develop practical knowledge of many vascular laboratory examinations. Such knowledge, however, may not be sufficient for them to perform formal interpretations of vascular laboratory studies. To optimally perform interpretations of noninvasive vascular laboratory studies, a basic understanding of ultrasound scanning physics and the principles of arterial and venous hemodynamics is required. A thorough understanding of arterial and venous anatomy, physiology, and disease processes is also required. Familiarity with quality assurance procedures, the capabilities of individual modes of testing, and the theoretic and practical limitations of each individual test is also required. Documentation of results and proper reporting procedures must be understood. Regardless of clinical background, any physician interpreting vascular laboratory studies should acquire a working knowledge of the skills necessary to perform the studies. Obtaining the registered vascular technologist credential, although helpful, is neither sufficient nor mandatory.

The vascular laboratory continues to change as new tests are developed, new clinical needs arise, and old clinical paradigms are reexamined, discarded, or both. Continuing medical education (CME) specific to noninvasive vascular diagnostics is therefore a requirement for maintaining current knowledge of vascular noninvasive diagnosis and should be a requirement for both initial and continued privileges in the interpretation of vascular laboratory examinations. To obtain and maintain privileges in vascular laboratory interpretation, physicians must therefore document CME credits specific to noninvasive vascular testing.

Some physicians will only interpret vascular diagnostic studies in specific areas and will not seek to interpret other types of vascular laboratory examinations. For example, neurologists may seek privileges only in the interpretation of extracranial and intracranial examinations and have no interest or intent to interpret other arterial studies. CME for such physicians should, therefore, be in their specific areas of interest.

Overall, the recommended requirements for physicians interpreting noninvasive vascular studies include 6 points. These recommendations have been developed in consultation with the Intersocietal Commission for Accreditation of Vascular Laboratories (ICAVL), the Society for Vascular Technology, and the Society for Vascular Surgery/American Association for Vascular Surgery Committee on Vascular Laboratories.

The recommended requirements for physician privileges in interpretation of noninvasive vascular laboratory examinations are:

1. A license to practice medicine in the state in which vascular interpretations are performed is required.
2. Knowledge of the fundamental concepts of vascular anatomy and physiology and ultrasound scanning physics is required. Minimal training acquired in medical school is not considered sufficient. Physicians interpreting vascular noninvasive studies should show evidence of additional training during residency, fellowship, or postgraduate CME course work that includes these basic principles.
3. Clinical experience in the diagnosis and treatment of vascular disease is required. Evidence of this experience may be seen in practice patterns or residency/fellowship training.
4. It is recognized that physicians in established practice of vascular laboratory interpretation may, because of clinical experience, have sufficient expertise and experience with interpretation. For the physician in established practice, it is suggested that earlier experience with interpretation of 300 peripheral arterial physiologic tests, 300 arterial duplex scanning examinations, 300 peripheral venous duplex scanning examinations, 300 carotid duplex scanning examinations, and 225 visceral duplex scanning examinations be required for new privileges to interpret vascular laboratory results in each respective area of testing. These suggestions are consistent with those suggested by ICAVL. Such experience does not, however, obviate the need for ongoing CME specific to vascular diagnostics, as detailed, to maintain privileges for vascular laboratory interpretation.
5. For newly trained physicians with formal vascular laboratory training in residency, supervised experience in the interpretation of vascular laboratory studies should be required when the physicians seek new privileges in the interpretation of vascular laboratory studies. Minimum supervised experience for physicians recently completing training should include completion of an approved residency or fellowship in which vascular noninvasive diagnosis is an integral part of that training. Documentation of this experience should be available. Although it is recognized that a specific number of cases in any field is difficult to mandate, the minimal, but not absolute, requirements for physicians with formal vascular laboratory training in residency seeking new privileges in interpretation of vascular laboratory examinations are

Table II. Minimum requirements for physicians with formal vascular laboratory training in residency who are seeking new privileges in interpretation of vascular laboratory examinations

Category of testing	*Number of cases*
Peripheral arterial physiologic test	100
Peripheral arterial duplex scanning	100
Peripheral venous duplex scanning	100
Carotid duplex scanning	100
Transcranial duplex/Doppler scanning	100
Visceral vascular duplex scanning	75

Table III. Minimum requirements for physicans without formal of vascular laboratory training who are seeking new priveleges in interpretation of vascular laboratory examinations

Category of testing	*Number of cases*
Peripheral arterial physiologic test	100
Peripheral arterial duplex scanning	100
Peripheral venous duplex scanning	100
Carotid duplex scanning	100
Transcranial duplex/Doppler scanning	100
Visceral vascular duplex scanning	75

listed in Table II. These recommendations are consistent with the recommendations of the ICAVL.

6. For physicians without formal vascular laboratory training in residency who are seeking new privileges in interpretation of vascular laboratory studies, supervised experience in the interpretation of vascular laboratory studies should be required. For physicians without documented residency or fellowship training in noninvasive vascular diagnosis or physicians without the adequate evidence mentioned in requirements 3 and 4, 40 hours of relevant CME should initially be obtained within a 3-year period. Although it is recognized that a specific number of cases in any field is difficult to mandate, minimal, but not absolute, requirements for physicians without formal vascular laboratory training in residency/fellowship who are seeking new privileges in interpretation of vascular laboratory examinations are listed in Table III. In addition to the number of cases required, a minimum of 10 hours of supervised practical experience in vascular laboratory testing is recommended. These recommendations are consistent with the recommendations of the ICAVL.
7. Ongoing evidence of CME relevant to vascular laboratory testing should be required to maintain privileges in interpretation of vascular laboratory examinations. Once initial requirements are met, at least 15 hours of CME specific to noninvasive vascular diagnosis must be obtained during any 3-year period on an ongoing basis. Such requirements are equal to those mandated for medical staff members in vascular laboratories accredited by the ICAVL.

IV. Medical management

The medical management of patients with the spectrum of vascular disorders is an expected part of the curriculum of the vascular residency. Graduates of vascular surgery residencies should have a thorough understanding of vascular disease risk factors and their management. In addition, the medical management of established vascular disorders including, but not limited to, cerebrovascular disease, peripheral vascular disease, and vascular insufficiency is an expected part of the curriculum in a vascular residency, and the graduates of vascular residency programs should be considered trained in applying medical management to patients with vascular disorders.

V. Critical care

It is expected that the vascular surgery resident would have been closely involved in the day-to-day management of vascular surgical patients in the intensive care and step-down units. The vascular resident should play an active role in all critical care management decisions for these patients. After completion of a certified vascular surgical residency, the trainee will have additional skills in surgical critical care. Surgical critical care is a component of both the general surgical training and the vascular surgical training programs. The additional training that occurs during a vascular residency would provide competency in the management of the spectrum of critical care problems that would occur in the treatment of patients with vascular disease.

PATHWAYS FOR GRANTING HOSPITAL PRIVILEGES

Hospital credentials committees should be aware that privileges for caring for patients with vascular disease can be complete, including all 5 components covered within the specialty of vascular surgery, or partial, limiting the applicant to 1 or more components depending on training and experience. Recommendations will provide optimal guidelines that will differentiate between new graduates and those who have already established a practice in vascular surgery.

Applicants for vascular surgery privileges who have just completed their surgical training

To qualify for privileges in vascular surgery, the applicant must be a graduate of a residency in vascular surgery that is accredited by the ACGME through its agent, the RRC-S, and provide a letter from the program director attesting to the satisfactory completion of the vascular training program. It is expected that the applicant be certified by the ABS with the Certificate in Vascular Surgery or be in the process of obtaining such certification.

Applicants in established practice

Applicants who are already established in the practice of vascular surgery and who are applying for privileges at a new hospital must document qualification and competence in treating patients with vascular disease. Because these appli-

cants will have been in practice in another hospital or community, they will have established practice experience from which to judge abilities and outcomes (ie, competence). Therefore, each applicant should submit to the hospital credentials/privileges committee discharge summaries and operative notes for the last consecutive 100 major vascular surgery reconstructions or the last 2-year consecutive case experience in managing vascular surgery problems, whichever is greater. Hospital credentials/privileges committees will assess the applicant's morbidity and mortality rates for various vascular procedures with acceptable limits defined by means of national criteria. The applicant will also present a letter from the chief of vascular surgery and the chief of surgery of each hospital in which the applicant currently practices, or from the former hospital(s) in which the applicant practiced, attesting that applicant is in good standing and currently has privileges in vascular surgery at that hospital. In addition, the applicant needs to document acceptable moral, ethical, and professional standing.

Renewal of vascular surgery privileges

The renewal of vascular surgery privileges by means of affirmation of competence is as important as the initial granting of vascular surgery privileges. Surgeons who may have qualified for privileges, by using the criteria aforementioned, may not necessarily maintain proficiency, and therefore continual review of their performance is recommended. Renewal of privileges should be granted on the basis of experience, with case outcome as the ultimate test of surgical judgment and competence. However, it should be recognized that practice and referral patterns can have both a positive and a negative impact on outcome. For example, it is not uncommon for the most difficult and high-risk cases to be referred to surgeons with the best reputation and highest levels of skill. These cases, by virtue of their complexity, will carry a higher risk of morbidity and mortality. Therefore, to ensure an equitable comparison, categories of cases, case mix, and disease severity in disease must be comparable. These recommendations are made about the renewal of vascular surgery privileges:

A. Record keeping. The medical records department of each hospital, or equivalent as designated by hospital administration, should maintain a continuous registry of vascular surgery cases for each surgeon credentialed in vascular surgery. Registry data should include, but not be limited to, patient age, associated diseases, indication for operation, operative procedure, duration of hospitalization, and outcome parameters.

B. Mechanism of audit. Although hospital privileges are renewed on an annual basis, there should be an audit of index cases every 3 years. It is recommended that the index cases include carotid endarterectomy, elective abdominal aortic aneurysm resection, femoral-popliteal bypass grafting, and endovascular intervention, when appropriate to an individual surgeon's practice.

The basis of each indexed category should be a minimum of 100 operations. If, during a 3-year interval, there are not 100 operations in a given category, then the audit team will review the prior years' experience until the total equals 100. When a surgeon has been in practice <3 years, the technique will be to use a running total of 100 cases by initially providing 100 complication-free hypothetical cases and subtracting actual cases, as added, to maintain a moving 100-case base. For example, for carotid endarterectomy, a new surgeon will be given 100 hypothetical operations without a death or stroke. As the surgeon's practice develops, each actual carotid endarterectomy performed is added to the 100, while at the same time a hypothetical case is dropped. In this way, at any time, the stroke morbidity and mortality rate can be calculated on the basis of a 100-case experience. However, complications and complication rates in actual cases should also be reviewed to prevent the hiding of an unacceptably high complication rate within the moving 100.

C. Suggested method for establishing acceptable morbidity/mortality rates for index cases. Each hospital credentials committee should assemble all of the staff surgeons who perform vascular surgery at that institution as a vascular surgery subcommittee for an annual meeting. The current literature reporting morbidity and mortality rates for the indexed cases should be reviewed as a subcommittee assignment. An appropriate range of operative morbidity and mortality rates for each procedure as a function of indications should be documented. The subcommittee should then agree on an upper acceptable limit of the morbidity and mortality rate for each procedure, beyond which results should be considered below institutional standards. These criteria would then be applied during periodic audits. Surgeons whose results failed to meet the defined acceptable standard for the institution would then be subject to review and possible corrective action.

Corrective action

When a surgeon fails to meet acceptable institutional standards in any of the indexed case categories, the surgeon's entire experience should be reviewed by peers. The surgeon in question should have the opportunity to discuss any extenuating circumstances for death or complications. After this preliminary review, if it is the opinion of the reviewer that the surgeon has failed to meet the standard, then corrective actions may be considered. Possible corrective actions might include:

A. One-year probation with monitoring. One or more credentialed vascular surgeons will monitor the surgeon on probation. Each of the surgeon's cases will be reviewed, and a second opinion will be rendered about operative indication. A credentialed vascular surgeon will observe each surgical procedure. After 1 year, results will be reviewed, and opinions from the monitoring vascular surgeons will be presented to the credentials committee that is evaluating reinstatement.

B. Additional training alternative. As an alternative to the period of probation, a surgeon may elect to take a sabbatical of 6 weeks or more in a teaching unit of an academic medical center with a large vascular surgery vol-

ume. The surgeon will be expected to actively participate in the program to update judgment and skills. On return from the sabbatical, annual audits will be carried out to determine whether there has been improvement in outcome when compared with the prior 3-year audit.

C. Reconciliation with hospital bylaws. Each individual hospital will need to correlate this document with its own bylaws and the provisions of the Health Care Quality and Improvement Act of 1986 to obtain the substantial immunities for peer-review activity provided by that act. Although 2 potential corrective actions are mentioned, individual hospitals may wish to add additional alternatives. For example, in particularly egregious cases, more severe corrective actions, such as termination or suspension of privileges, may be warranted.

Appeals

Any surgeon who is subject to review and corrective measures may request a hearing with a review council consisting of 3 vascular surgery consultants recruited from a different community. The surgeon may request a re-review of the index cases and may present data from the prior 3 years for comparison. The surgeon will have the opportunity to discuss specific cases and extenuating or unusual circumstances affecting outcome. The review council will then vote to either uphold or rescind the recommendation for corrective action.

This document has been reviewed by the Vascular Surgery Board of the American Board of Surgery and found to be consistent with their education and certification policies. It has also been reviewed and approved by the Association of Program Directors in Vascular Surgery.

REFERENCES

1. Moore WS, Treiman RL, Hertzer NR, et al, Ad Hoc Committee to the Joint Council for the Society of Vascular Surgery and the North American Chapter of the International Society of Vascular Surgery. Guidelines for hospital privileges in vascular surgery. J Vasc Surg 1989; 10:678-82.
2. Cronenwett J, Berkmeyer J, editors. The Dartmouth atlas of vascular health care. Chicago: AHA Press; 2000.
3. Kresowik TF, Bratzler D, Karp HR, et al. Multistate utilization, processes, and outcomes of carotid endarterectomy. J Vasc Surg 2001;33: 227-35.
4. Berkmeyer JD, Finlayson EVA, Berkmeyer CM. Volume standards for high-risk surgical procedures: potential benefits of the leapfrog initiative. Surgery 2001;130:415-22.
5. Tu JV, Austin PC, Johnston KW. The influence of surgical specialty training on the outcomes of elective abdominal aortic aneurysm surgery. J Vasc Surg 2001;33:447-52.
6. Hill SL, Holtzman G. Vascular surgeons—do they make a difference in vascular disease? Surgery 2001;129:136-42.
7. Pierce HW, Parker AM, Feinglass J, Vjiki M, Manheim MC. The importance of surgeon volume and training in outcomes for vascular surgical procedures. J Vasc Surg 1999;29:768-78.
8. Clagett GP, Calligaro KD, Freischlag J, et al. The vascular surgery sub-board: progress report. J Vasc Surg 2000;31:1060-5.
9. Kashyap VS, Ahn SS, Petrik PV, Moore WS. Current training and practice of endovascular surgery: a survey. Ann Vasc Surg 2001;15:294-305.
10. White RA, Hodgson KJ, Ahn SS, Hobson RW II, Veith FJ. Endovascular interventions training and credentialing for vascular surgeons. J Vasc Surg 1999;29:177-86.

Submitted Aug 8, 2002; accepted Aug 13, 2002.